

REMARKS

Claims 1-19 are pending in this application. Claims 2, 3, 4, 11, 13 and 16 have been amended. Claims 5, 6, 12, 17 and 18 remain unchanged. Claims 1, 7, 8, 9, 10, 14, 15 and 19 have been cancelled. No new claims have been added. No changes have been made to the specification.

Claims 7, 8 and 9 were objected to under 37 CFR §1.75(c) as being of improper dependent claim form for failing to further limit the subject matter of a previous claim. In particular, the Examiner has inquired as to how these claims further structurally limit the claims from which they depend. Claims 7-9 have been cancelled.

Claim 16 stands rejected under 35 U.S.C. 112 as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. In particular, the Examiner has objected to the use of the phrase “for example” as lacking “positive” claim language. Claim 16 has been amended by deleting the phrase “for example...” to address this issue.

Claims 1-3, 6-10, 12-14 and 16-19 are rejected under 35 U.S.C. §102(b) as being anticipated by United States Patent No. 4,273,294 to Hollely et al. (hereinafter Hollely et al.). Claims 1-3, 6-10, 12-14, 18 and 19 are rejected under 35 U.S.C. §102(b) as being anticipated by United States Patent No. 4,428,535 to Venetucci (hereinafter Venetucci).

Claim 1 has been cancelled and claim 2 has been amended to provide emphasis on certain structural limitations that cannot be found in either the Hollely et al. or Venetucci references. Specifically, the amendment has particularly pointed out that the inlet section is an

inclined gravity feed inlet so that the feed material is fed into the apparatus by gravity. Further, the source of liquefied inert gas is connected to the inlet section of the apparatus by radially directed gas nozzles and a crusher is directly connected to the inlet section of the apparatus, downstream of the gas nozzles. Claim 13 has been amended to include similar limitations. Support for these amendments can be found in paragraphs [0011] and [0016] of the Specification. Additional support for the amendment can be found by observing the inlet tube (14) as depicted in Figure 1 of the application.

Claims 2 and 13 now have at least three salient limitations, as follows:

- 1) The rate of flow and cooling of the feed material in the inlet is controlled solely by gravity as a function of the inclination of the inlet tube (14);
- 2) The feed material is cooled in the inlet section of the apparatus by inwardly directed gas nozzles; and,
- 3) The crusher is directly connected to the inlet section of the apparatus.

None of the prior art of record includes such limitations, either alone or in combination. Generally, improvements in apparatus involving cryogenic freezing have relied on making improvements on the amount of cryogenic liquid needed to operate the device. In contrast, one of the objects of the present invention is to be able to rapidly cool feedstock material to be processed in bulk, wherein the inlet section of the apparatus has no moving parts. As such, the present invention can process large quantities of feedstock material without encountering mechanical difficulties or breakdowns. Further, Applicant had attempted to use auger feed devices similar to those found in Hollely et al. (Element 23) and Venetucci (Element 18) without success. Neither Hollely et al. nor Venetucci include elements, or a combination of elements, which are the equivalent of the inlet section that controls the rate of flow and cooling of the feed

material by gravity with the introduction of a liquefied inert gas in the inlet section that directly is connected to a crusher. Accordingly, claims 2 and 13 are patentably distinct over the prior art of record. Claims 3-6, 11-13 and 16-18 depend from and add further limitation to claims 2 and 13 respectively. These claims are therefore deemed allowable for the same reasons above. Turning to the principal references, each of Hollely et al. and Venetucci have gravity inlet, namely, feed hopper (22) and hoppers (34a and 34b), respectively. However, the rate of flow and cooling of the feed material is not controlled by these elements. In comparison, Hollely et al. uses screw conveyor (23) and spray header (33) to control the rate of flow and cooling of the feed material. Similarly, Venetucci uses chamber (10), feed auger (18) and nozzle device (49) to control the rate of flow and cooling of the feed material. Additionally, neither reference attempts to cool the feed material in the inlet section of the apparatus.

Further, while each of Hollely et al. and Venetucci has a crusher, namely, hammermill (24) and grinding chamber (80), respectively, these elements are not attached directly to the inlet section of the device. Accordingly, the Examiner can no longer rely on either reference to reject the claims now present, and as amended in the application.

Lastly, Applicant requests that the Examiner acknowledge the claim of priority under 35 U.S.C. §119(e) to United States Provisional Patent Application No. 60,251,677, filed December 6, 2000, in the next action.

For all of the foregoing reasons, Applicant believes that claims 2-6, 11-13 and 16-18 are patentably distinctive over the prior art of record. Reconsideration and allowance of pending claims are respectfully requested.

Respectfully submitted,

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